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Identification of biological agents using miniaturized devices for flow cytometry and PCR

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LLNL has an ongoing research effort to develop miniaturized instrumentation for biological point detection and identification. A mini-flow cytometer has been developed for antibody-based agent identification. Labeling methods have been developed for the 4 simulants B. globigii, E. herbicola, MS2, and Ovalbumin. A mini-PCR instrument has been developed for DNA-based identification, with assays currently developed for the simulants B. globigii and E. herbicola. Both of these instruments were evaluated as identifiers in the laboratory trials of JFT-III at Dugway, UT, in Oct. 1996. The results of these trials will be presented to show the current performance and relative merits of these two approaches for identification of different classes of biological agents.

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